

IN THE CLAIMS:

1. (Currently Amended) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber;

a part-carrying system movable inside said vacuum chamber;

5 a discharge electrode;

a diffuser associated with said discharge electrode for introduction of at least one fluid substance;

a housing containing at least partly said discharge electrode and/or said diffuser, said discharge electrode, said housing and said diffuser extending in a direction parallel to a longitudinal axis of said vacuum chamber, and said housing defining an opening, said opening  
10 extending parallel to said longitudinal axis of said vacuum chamber, said housing being located in an approximately central position within said vacuum chamber when said housing is arranged inside said vacuum chamber;

a plurality of closing hatches, said housing, said discharge electrode and said diffuser  
15 being located on each of said closing hatches, said diffuser being located in an area of said discharge electrode, each of said closing hatches having said part-carrying system connected thereto; and

a fixed body for alternately receiving one of said closing hatches and another of said closing hatches, one of said closing hatches and said fixed body defining a vacuum chamber  
20 when said fixed body receives one of said closing hatches, said part-carrying system being

movable within said vacuum chamber when said fixed body receives one of said closing hatches.

2. (Previously Presented) Plant according to claim 1, wherein said part-carrying system rotates about an axis of rotation inside said vacuum chamber.

3. (Previously Presented) Plant according to claim 1, wherein said housing has the form of a substantially semi-cylindrical wall surrounding at least partially said discharge electrode and said diffuser.

4. (Previously Presented) Plant according to claim 1, wherein said housing is arranged inside said part-carrying system.

5 - 8. (Canceled)

9. (Currently Amended) Plant according to claim [[8]] 28, wherein said housing, said discharge electrode and said diffuser have a horizontal extension substantially parallel to the axis of said vacuum chamber.

10. (Canceled)

11. (Currently Amended) Plant according to claim [[8]] 28, wherein said housing, said

discharge electrode and said diffuser are mounted on an end of said chamber substantially opposite the hatch for closing thereof.

12. (Previously Presented) Plant according to claim 1, wherein said housing for the assembly consisting of discharge electrode and diffuser has the form of an arched surface.

13. (Previously Presented) Plant according to claim 12, wherein said housing has a shape of a cylindrical surface.

14. (Previously Presented) Plant according to claim 12, wherein the discharge electrode and the diffuser are arranged inside the arc defined by the cross section of the housing.

15. (Previously Presented) Plant according to claim 14, wherein the discharge electrode is located in the center of the arc of the respective housing and the diffuser is located in a radially peripheral zone.

16. (Currently Amended) Plant according to claim ~~[[5]]~~ 1, wherein the vacuum chamber defined by said body and by said closing hatches has a substantially cylindrical shape with a circular cross section.

17. (Previously Presented) Plant according to claim 1, wherein said diffuser has a plurality of calibrated holes distributed along the longitudinal extension of said diffuser with a diameter increasing from a first end to a second end of said diffuser, the first end of the diffuser being connected to a duct supplying the product to be diffused inside the vacuum chamber and the second end being closed.

18. (Previously Presented) Plant according to claim 1, wherein a second diffuser for the introduction of a substance in the fluid state is associated with said discharge electrode.

19. (Previously Presented) Plant according to claim 18, wherein said diffuser has the function of introducing a substance for the formation of a protective layer deposited on the parts treated in the vacuum chamber and said second diffuser has the function of introducing a gas.

20. (Previously Presented) Plant according to claim 18, wherein said second diffuser is enclosed in the volume protected by said housing.

21. (Currently Amended) Plant according to claim 1, wherein, on each of said hatches, the discharge electrode, the diffuser and the housing are located in the vicinity of the edge of the hatch which in the closed condition cooperates with the edge of the fixed body so as to form and close said vacuum chamber and in that said housing has a convexity directed

5 toward the axis of rotation of the carousel.

22. (Previously Presented) Plant according to claim 1, wherein two or more of said housings with corresponding discharge electrodes and diffusers are arranged inside said vacuum chamber.

23. (Previously Presented) Plant according to claim 1, wherein said part-carrying system comprises a carousel rotating about a main axis of rotation, and a series of part-carrying devices rotating about respective auxiliary axes parallel to the main axis of rotation, the parts thus being imparted a planetary motion inside the vacuum chamber.

24. (Previously Presented) A plant for vacuum metallization of objects treated in batches, comprising:

a plurality of closing hatches;

5 a fixed body cooperating alternately with one of said closing hatches and another of said closing hatches, each closing hatch forming a vacuum chamber with said fixed body when said closing hatch is in a closed position, each of said hatches having a part-carrying system, said part-carrying system being movable inside said vacuum chamber when said closing hatch is in said closed position;

a high-voltage discharge electrode located on each of said closing hatches;

10 a diffuser for introducing at least one fluid substance in said vacuum chamber, said

diffuser being located on each of said closing hatches in an area of said high-voltage discharge electrode;

15 a housing located on each closing hatch, said housing partially surrounding said high-voltage discharge electrode and said diffuser, said discharge electrode, said housing and said diffuser extending parallel to a longitudinal axis, said housing defining an opening parallel to said longitudinal axis, one housing of one of said closing hatches being located within said vacuum chamber, in an approximately central position.

25. (Previously Presented) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber, said vacuum chamber having a frontally closing hatch and a substantially horizontal longitudinal axis;

5 a part-carrying system movable inside said vacuum chamber, said part-carrying system being inserted into and extracted from said vacuum chamber;

a discharge electrode;

a diffuser associated with said discharge electrode for introduction of at least one fluid substance;

10 a housing containing at least partly said discharge electrode and/or said at least one diffuser, said housing, said discharge electrode and said diffuser being movable with said part-carrying system such that said housing, said discharge electrode and said diffuser are inserted into said vacuum chamber and extracted therefrom, wherein said discharge electrode

and said diffuser are elongated and extend parallel to a longitudinal axis, and said housing is  
15 opened parallel to said axis, said housing being arranged inside said vacuum chamber, in an  
approximately central position.

26. (New) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber;

a part-carrying system movable inside said vacuum chamber;

a discharge electrode;

5 a diffuser associated with said discharge electrode for introduction of at least one fluid  
substance;

a housing containing at least partly said discharge electrode and/or said diffuser, said  
discharge electrode, said housing and said diffuser extending in a direction parallel to a  
longitudinal axis of said vacuum chamber, and said housing defining an opening, said opening  
10 extending parallel to said longitudinal axis of said vacuum chamber, said housing being located  
in an approximately central position within said vacuum chamber when said housing is arranged  
inside said vacuum chamber;

a plurality of closing hatches, said housing, said discharge electrode and said diffuser  
being located on each of said closing hatches, said diffuser being located in an area of said  
15 discharge electrode, each of said closing hatches having said part-carrying system connected  
thereto; and

a fixed body for alternately receiving one of said closing hatches and another of said

closing hatches, one of said closing hatches and said fixed body defining a vacuum chamber  
when said fixed body receives one of said closing hatches, said part-carrying system being  
movable within said vacuum chamber when said fixed body receives one of said closing hatches,  
wherein said housing, said discharge electrode and said diffuser of each hatch are located inside  
the volume defined by the respective hatch, in the vicinity of the longitudinal axis of the vacuum  
chamber.

27. (New) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber;

a part-carrying system movable inside said vacuum chamber;

a discharge electrode;

a diffuser associated with said discharge electrode for introduction of at least one fluid  
substance;

a housing containing at least partly said discharge electrode and/or said diffuser, said  
discharge electrode, said housing and said diffuser extending in a direction parallel to a  
longitudinal axis of said vacuum chamber, and said housing defining an opening, said opening  
extending parallel to said longitudinal axis of said vacuum chamber, said housing being located  
in an approximately central position within said vacuum chamber when said housing is arranged  
inside said vacuum chamber;

a plurality of closing hatches, said housing, said discharge electrode and said diffuser  
being located on each of said closing hatches, said diffuser being located in an area of said



15 discharge electrode, each of said closing hatches having said part-carrying system connected thereto; and

a fixed body for alternately receiving one of said closing hatches and another of said closing hatches, one of said closing hatches and said fixed body defining a vacuum chamber when said fixed body receives one of said closing hatches, said part-carrying system being  
20 movable within said vacuum chamber when said fixed body receives one of said closing hatches, wherein said hatches are hinged with said body on opposite sides thereof about hinging axes substantially parallel to the axis of the vacuum chamber, said axis being substantially vertical.

28. (New) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber having a frontally closing hatch and a substantially horizontal longitudinal axis;

a part-carrying system movable inside said vacuum chamber, said part-carrying system  
5 being insertable and extractable from said vacuum chamber;

a discharge electrode;

a diffuser associated with said discharge electrode for introduction of at least one fluid substance;

a housing containing at least partly said discharge electrode and/or said diffuser, said  
10 discharge electrode, said housing and said diffuser extending in a direction parallel to a longitudinal axis of said vacuum chamber, and said housing defining an opening, said opening extending parallel to said longitudinal axis of said vacuum chamber, said housing being located

in an approximately central position within said vacuum chamber when said housing is arranged  
inside said vacuum chamber, said housing, said discharge electrode and said diffuser being  
15 movable with said part-carrying system so as to be inserted into said chamber and extracted  
therefrom.